



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,786	03/22/2006	Eric Julien	200312561-3	5842
22879 7590 04/20/2011 HEWLETT-PACKARD COMPANY Intellectual Property Administration 3404 E. Harmony Road Mail Stop 35 FORT COLLINS, CO 80528			EXAMINER LEE, JAE YOUNG	
			ART UNIT 2466	PAPER NUMBER
			NOTIFICATION DATE 04/20/2011	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
ipa.mail@hp.com
laura.m.clark@hp.com

Office Action Summary

Application No.

10/561,786

Applicant(s)

JULIEN, ERIC

Examiner

JAE Y. LEE

Art Unit

2466

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-6 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-6, and 8-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. In view of the appeal brief filed on 2 February 2011, PROSECUTION IS HEREBY REOPENED. The new grounds of rejections set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 2, 4-6, and 8-16 have been considered but are moot in view of the new ground(s) of rejection.

Response to Amendments

3. Claims 3 and 7 have been canceled.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

5. all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 1, 16** are rejected under 35 U.S.C. 103(a) as being unpatentable by

Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and

Tovander (US 6,507,649).

For claim 1, Niermann discloses a method comprising:

- **receiving a message from an originating network element at an interface of a service application, wherein the service application interfaces with both a Signaling System 7 (SS7) network and an Internet Protocol (IP) network**
(Fig. 4; Fig. 6; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service;

paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109; paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic), **and wherein the message includes a point code associated with the network element** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic);

- **a message transport part layer 3 (MTP3) application programming interface (API) level of a protocol stack to determine how to process the message, wherein the protocol stack comprises both a MTP3 layer and a MTP3 user adaptation layer (M3UA) layer** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic);

Niermann discloses all the subject matter of claimed invention with the exception for **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the

Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses

accessing a network selection table and the network selection table comprises entries that associate point codes with network types (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate

accessing a network selection table and the network selection table comprises entries that associate point codes with network types of Garcia-Martin to the method of Niermann, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann and Garcia-Martin disclose all the subject matter of claimed invention with the exception for **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the M3UA layer if it is determined that the point code associated with the originating network element corresponds to the IP network** whereas Niermann discloses SG having MP3

layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet (Niermann Fig. 2, Fig. 5; paragraph 0028, 0039, 0040, 0041; Garcia-Martin col 5 lines 19-60). In particular, M3UA layer is connected to Internet. Tovander from the same or similar fields of endeavor discloses **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network** (Fig. 1, 4, 5, col 3 lines 60-65, col 6 lines 59-64: when a message is received from PSTN, mapping is performed based on tDPC, OPC, NI and CIC are used to determine which VG/AS to which the message is sent via Internet; the message is processed with the MTP3 layer as of receiving a message from PSTN in Fig. 4), **processing the message with the TCP/IP layer if it is determined that the point code associated with the originating network element corresponds to the IP network** (Fig. 1, 4, 5, col 3 lines 60-65, col 4 lines 14-16, col 7 lines 17-23: when a message from VG/AS via Internet, mapping is performed based on OPC, DPC, SLS, and NI to route message to PSTN; the message is processed with the TCP/IP layer as of receiving a message from Internet in Fig. 4). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the TCP/IP layer if it is determined that the point code associated with the originating network element corresponds to the IP network** of Tovander to the method of Niermann and Garcia-Martin, thereby, SG processes a message with MTP3 layer upon receiving the

message having OPC from PSTN while a message is processed with M3UA, which is alternative to TCP/IP layer for connecting to internet, upon receiving the message from Internet. The motivation would have been to provide mechanism in the form of a thin layer within the SS7 protocol stack that makes it possible for ISUP stacks running on distributed processors to run independently without knowledge regarding its distribution (Tovander col 2 lines 28-32).

For claims 16, Niermann discloses

- **wherein the originating network element is a service switching point (SSP) or a message switching center (MSC)** (paragraph 0025 lines 5-8: SSP can provide an interface between a telecommunications switch such as a Mobile Switching Center (MSC) and other nodes of the SS7 network; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109)

8. **Claims 2, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Larson et al. (US 6,594,258).

For claim 2, Niermann discloses

- **the service application** (paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service)

Niermann, Garcia-Martin, Tovander disclose all the subject matter of claimed invention with the exception for **a home location register (HLR) or a service control point (SCP)**. Larson from the same or similar fields of endeavor discloses **a home location register (HLR) or a service control point (SCP)** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a home location register (HLR) or a service control point (SCP)** of Larson into the method of Niermann, Garcia-Martin, Tovander, thereby, HLR integrated with a SG having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

For claim 15, Niermann discloses

- **the device** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and

Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann, Garcia-Martin, Tovander disclose all the subject matter of claimed invention with the exception for **device is not a signaling gateway**. Larson from the same or similar fields of endeavor discloses **device is not a signaling gateway** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **device is not a signaling gateway** of Larson into the method of Niermann, Garcia-Martin, Tovander, thereby, HLR integrated with a SG having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

9. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Khandri et al. (US 2002/0196779).

For claim 4, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing

information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **network selection table populated automatically**. Khandri from the same or similar fields of endeavor discloses routing **network selection table populated automatically** (paragraph 0016, 0046: RGC database manager performs administration of routing data in the table). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table populated automatically** of Khandri to the method of Niermann, Garcia-Martin, and Tovander, thereby, the network selection table is populated automatically. The motivation would have been to enhance efficiency of processing the network selection table by administrating the table without human intervention.

10. **Claims 5, 8, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander (US 6,507,649), and Khandri et al. (US 2002/0196779).

For **claim 5**, Niermann discloses a system comprising:

- **a communication interface configured to receive a message from an originating network element at an interlace of a service application, wherein the service application interfaces with both a Signaling System 7**

(SS7) network and an Internet Protocol (IP) network (Fig. 4; Fig. 6; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109; paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic), **and wherein the message includes a point code associated with the network element** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic);

- **a message transport part layer 3 (MTP3) application programming interface (API) level of a protocol stack to determine how to process the message, wherein the protocol stack comprises both a MTP3 layer and a MTP3 user adaptation layer (M3UA) layer** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic);

Niermann discloses all the subject matter of claimed invention with the exception
for **accessing a network selection table and the network selection table comprises**

entries that associate point codes with network types whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** of Garcia-Martin to the system of Niermann, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann and Garcia-Martin disclose all the subject matter of claimed invention with the exception for **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the M3UA layer if**

it is determined that the point code associated with the originating network element corresponds to the IP network whereas Niermann discloses SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet (Niermann Fig. 2, Fig. 5; paragraph 0028, 0039, 0040, 0041; Garcia-Martin col 5 lines 19-60). In particular, M3UA layer is connected to Internet. Tovander from the same or similar fields of endeavor discloses **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network** (Fig. 1, 4, 5, col 3 lines 60-65, col 6 lines 59-64: when a message is received from PSTN, mapping is performed based on tDPC, OPC, NI and CIC are used to determine which VG/AS to which the message is sent via Internet; the message is processed with the MTP3 layer as of receiving a message from PSTN in Fig. 4), **processing the message with the TCP/IP layer if it is determined that the point code associated with the originating network element corresponds to the IP network** (Fig. 1, 4, 5, col 3 lines 60-65, col 4 lines 14-16, col 7 lines 17-23: when a message from VG/AS via Internet, mapping is performed based on OPC, DPC, SLS, and NI to route message to PSTN; the message is processed with the TCP/IP layer as of receiving a message from Internet in Fig. 4). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the TCP/IP layer if it is determined that the point code associated with the originating network**

element corresponds to the IP network of Tovander to the system of Niermann and Garcia-Martin, thereby, SG processes a message with MTP3 layer upon receiving the message having OPC from PSTN while a message is processed with M3UA, which is alternative to TCP/IP layer for connecting to internet, upon receiving the message from Internet. The motivation would have been to provide mechanism in the form of a thin layer within the SS7 protocol stack that makes it possible for ISUP stacks running on distributed processors to run independently without knowledge regarding its distribution (Tovander col 2 lines 28-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **a processor and a computer-readable storage medium including computer-readable instruction stored therein that, upon execution by the processor, cause the device**. Khandri from the same or similar fields of endeavor discloses a **processor and a computer-readable storage medium including computer-readable instruction stored therein that, upon execution by the processor, cause the device** (paragraph 0019: applications stored in memory executed by microprocessor within signaling gateway). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a processor and a computer-readable storage medium including computer-readable instruction stored therein that, upon execution by the processor, cause the device** of Khandri to the system of Niermann, Garcia-Martin, and Tovander. The motivation would have been to run the application program on the hardware system properly.

For claim 8, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing

information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **network selection table populated automatically**. Khandri from the same or similar fields of endeavor discloses routing **network selection table populated automatically** (paragraph 0016, 0046: RGC database manager performs administration of routing data in the table). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table populated automatically** of Khandri to the method of Niermann, Garcia-Martin, and Tovander, thereby, the network selection table is populated automatically. The motivation would have been to enhance efficiency of processing the network selection table by administrating the table without human intervention.

For claims 12, Niermann discloses

- **wherein the originating network element is a service switching point (SSP) or a message switching center (MSC)** (paragraph 0025 lines 5-8: SSP can provide an interface between a telecommunications switch such as a Mobile Switching Center (MSC) and other nodes of the SS7 network; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes

in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109)

11. **Claims 6, 11** are rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander (US 6,507,649), and Khandri et al. (US 2002/0196779) as applied to claim 5 above, and further in view of Larson et al. (US 6,594,258).

For claim 6, Niermann discloses

- **the device** (paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109)

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **a home location register (HLR) or a service control point (SCP)**. Larson from the same or similar fields of endeavor discloses **a home location register (HLR) or a service control point (SCP)** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a home location register (HLR) or a service control point (SCP)** of Larson into the system of Niermann, Garcia-Martin, Tovander, and Khandri, thereby, HLR integrated

with a SG having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

For claim 11, Niermann discloses

- **the device** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **device is not a signaling gateway** Larson from the same or similar fields of endeavor discloses **device is not a signaling gateway** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a device is not a signaling gateway** of Larson into the system of Niermann, Garcia-Martin, Tovander, and Khandri, thereby, HLR integrated with a SG

having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

12. **Claims 9** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander (US 6,507,649), and Khandri et al. (US 2002/0196779) as applied to claim 5 above, and further in view of Lundstrom (US 2007/0220166).

For claim 9, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the**

network selection table (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the system of Niermann, Tovander, and Khandri, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **the network selection table populated manually**. Lundstrom from the same or similar fields of endeavor discloses **the network selection table populated manually** (paragraph 0016: a table is taught to be manually updated (populated)). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table populated manually** of Lundstrom to the system of Niermann, Garcia-Martin, Tovander, and Khandri. The motivation would have been to provide manual population of a table will enable a system to handle unforeseen events that are not accounted for in automatic population.

13. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander (US 6,507,649), and Khandri et al. (US 2002/0196779) as applied to claim 5 above, and further in view of Prasad et al. (US 2003/0016684).

For claim 10, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links

upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the system of Niermann, Tovander, and Khandri, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer**. Prasad from the same or similar fields of endeavor discloses **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer** (Fig. 6 550 routing table, 505 MTP 3, 580 M3UA; paragraph 0030 lines 11-23: the processor first reviews the SS7 routing table (RT) to determine the routing context associated with the routing code specified by the received SS7 signal as the destination address and the "upward" routing context indicates that the specified routing code can be identified within a separate IP routing table and thereby indicating the signal can be communicated over an IP network; paragraph 0031 lines 1-3: in response to a determination that the specified routing

context is upward, the processor then reviews the IP routing table stored within the serving STP) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer of Prasad** to the system of Niermann, Garcia-Martin, Tovander, and Khandri. The motivation would have been to transiently connect and interface with IP network without requiring undesirable or complex changes (Prasad paragraph 0008 lines 10-13).

14. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Prasad et al. (US 2003/0016684).

For claim 13, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling

gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer**. Prasad from the same or similar fields of endeavor discloses **network selection table**

comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer (Fig. 6 550 routing table, 505 MTP 3, 580 M3UA; paragraph 0030 lines 11-23: the processor first reviews the SS7 routing table (RT) to determine the routing context associated with the routing code specified by the received SS7 signal as the destination address and the "upward" routing context indicates that the specified routing code can be identified within a separate IP routing table and thereby indicating the signal can be communicated over an IP network; paragraph 0031 lines 1-3: in response to a determination that the specified routing context is upward, the processor then reviews the IP routing table stored within the serving STP) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer of Prasad** to the method of Niermann, Garcia-Martin, and Tovander. The motivation would have been to transiently connect and interface with IP network without requiring undesirable or complex changes (Prasad paragraph 0008 lines 10-13).

15. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Lundstrom (US 2007/0220166).

For claim 14, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **the network selection table populated manually**. Lundstrom from the same or similar fields of endeavor discloses **the network selection table populated manually** (paragraph 0016: a table is taught to be manually updated (populated)). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table populated manually** of Lundstrom to the method of Niermann, Garcia-Martin, and Tovander. The motivation would have been to provide manual population of a table will enable a system to handle unforeseen events that are not accounted for in automatic population.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae Y. Lee whose telephone number is (571) 270-3936. The examiner can normally be reached on Monday through Friday from 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jae Y Lee/
Examiner, Art Unit 2466

/Daniel J. Ryman/
Supervisory Patent Examiner, Art
Unit 2466